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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Paul Apar

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT

PAPER NUMBER

2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,985	Applicant(s) APARD ET AL.	
	Examiner YOGESH K. AGGARWAL	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-10, 13 and 14 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-10, 13, 14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/23/2009</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8-10 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hua et al. (US Patent # 7,142,240) in view of Guidash (US PG-PUB # 20050045980).

[Claim 8]

Hua et al. teaches a method of driving a photosensitive device (figure 3, image sensor array 30), comprising a matrix of photo-sensitive pixels (APS 11) distributed at the intersections of rows and columns of the matrix (figure 3), which consists in subjecting the matrix to an image cycle that includes a resetting phase prior to an image acquisition phase (col. 3 lines 61-67), wherein rows of the matrix are distributed in several groups (col. 4 lines 38-44), the method consists, during the resetting phase, in resetting all the rows of any one group simultaneously and in resetting each group of rows in succession and wherein all the rows in any one group are disjoint (col. 4 lines 1-11 teach that the whole sensor is reset sequentially but one or more rows are reset simultaneously, col. 4 lines 41-44 teach that the groups of rows are not necessarily adjacent).

Hua fails to teach wherein the distribution of the rows, in a group forms a comb, and wherein rows forming a group are uniformly spaced apart with a pitch equal to $\alpha = N/n$, where N is the total number of rows of the matrix and n is the number of rows per group, and wherein the comb is moved at least $\alpha - 1$ times so as to scan all of the rows of the matrix.

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However Guidash teaches that pixels are readout from two adjacent lines in an array. Therefore if $N=2$ and $n=2$, then $\alpha=N/n=1$. Therefore assuming there are two rows in an array and a total of 2 rows in the group, the comb will move $\alpha-1$ times i.e. 0 times to scan all the rows of the matrix (Paragraph 23, figure 4). Therefore this arrangement is read as a comb since the claim does not restrict the values of N , n and α to a particular range.

Therefore taking the combined teachings of Hua and Guidash, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have the distribution of the rows, in a group forms a comb, and wherein rows forming a group are uniformly spaced apart with a pitch equal to $\alpha= N/n$, where N is the total number of rows of the matrix and n is the number of rows per group, and wherein the comb is moved at least $\alpha-1$ times so as to scan all of the rows of the matrix in order for the data to be available for dark and bright regions separately.

[Claim 9]

Hua teaches wherein the rows in any one group need not be adjacent (col. 4 lines 41-44) and also teach that the group has one or more rows (col. 4 lines 38-41). It would be a matter of design choice or an obvious variation based on the teachings of Hua to have the rows separated by at least two rows that do not belong to the group in question since this design feature would produce no unexpected results.

[Claim 10]

Hua teaches in col. 4 lines 38-41 teach that each group has one or more rows. Therefore it would be a matter of design choice or an obvious variation based on the teachings of Hua to have the

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groups with similar number of rows since this design feature would produce no unexpected results.

[Claim 13]

Hua teaches sequentially resetting the rows of the image sensor wherein it consists in waiting until the resetting of a group has been completed before starting to reset another group (col. 4 lines 9-11, lines 38-44).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hua et al. (US Patent # 7,142,240), Guidash (US PG-PUB # 20050045980), Raynor et al. (US PG-PUB 20020114025) and in further view of Arques (US Patent # 4,957,659).

[Claim 14]

Hua in view of Guidash fails to teach wherein the image acquisition phase is followed by a read phase during which a first electrical pulse is sent in succession to each row of the matrix, the first pulse making it possible to read the quantity of charge stored in the photosensitive pixels during the image acquisition phase, in that, during the reset phase, a second electrical pulse is sent to all the rows in any one group, in order to reset the rows in the group, and wherein the first and second pulses are substantially identical. However Raynor et al. teaches The readout mechanism then proceeds in a row sequential fashion, similar to the mechanism used in the 3T pixels. As all

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the pixels in the array are reset and measured simultaneously, the array captures a snapshot of the light pattern falling on the sensor (Paragraph 8). Therefore taking the combined teachings of Hua and Raynor, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have a read phase during which a first electrical pulse is sent in succession to each row of the matrix, the first pulse making it possible to read the quantity of charge stored in the photosensitive pixels during the image acquisition phase, in that, during the reset phase, a second electrical pulse is sent to all the rows in any one group, in order to reset the rows in the group in order as the total time for the collection of light is reduced which leads to a reduced chance for a camera shake. Hua in view of Raynor fails to teach that the resetting and reading pulses are identical. However Arques teach that the resetting and reading pulses are substantially identical in order to have an image that has lesser noise because of similar shape pulses applied during reset and readout (col. 9 lines 12-16). Therefore taking the combined teachings of Hua, Guidash Raynor and Arques, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have the resetting and reading pulses are substantially identical in order to have an image that has lesser noise because of similar shape pulses applied during reset and readout.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOGESH K. AGGARWAL whose telephone number is (571)272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogesh K Aggarwal/
Examiner, Art Unit 2622